AMERICAN ANNALS OF THE DEAF

Official Organ

Conference of Executives of American Schools for the Deaf
Convention of American Instructors of the Deaf

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AMERICAN ANNALS OF THE DEAF

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A Comparison of Techniques for Increasing the Rate of Comprehension in Reading by Deaf Children

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CHAPTER I—INTRODUCTION

General Statement of Purpose

YOUNG people who suffer from deafness must acquire their education under serious difficulties. If a child is born deaf or becomes deafened at an early age, he can be taught the use of language only with difficulty. The American system of public education has recognized the needs of children handicapped by deafness, and has provided special training for them. In the schools for the deaf it is necessary first to teach a child the basic ideas of English, and to develop speech, lip-reading and written English as effectively as the capacities of the child permit. Under these circumstances, any step toward the improvement of reading instruction will mark an important advance. It is the purpose of this study to determine the effects, as compared with standard procedures, of two experimental techniques for increasing the speed of reading, by deaf children. As used here quality has two aspects. It concerns itself chiefly with the comprehension of what is read. If a reader understands completely what he reads, his reading is of high quality. It also con-

cerns itself with the mechanical aspects of reading. If the eye motions are rhythmic, and perfectly controlled, this will be taken as a sign of high quality of reading. In this study careful consideration is given to the way the pupil moves his eyes while reading, and measurements that show good, average or poor muscular control of the eyes will contribute to the estimate of quality.

A controlled experiment was conducted at the Pennsylvania School for the Deaf during the academic year 1941-42. There are a number of factors that affect the quality of reading to be expected of a pupil. The instruction received from his teachers is assumed to have a large effect on the rate of improvement of his reading. But under identical instructional methods pupils do not progress at equal rates. Among the other factors that affect the problem are home environment, intelligence, physical condition, interest in school work, and possibly other factors. It is therefore necessary not only to define as clearly as possible under actual classroom conditions the techniques used for increasing speed, but also to consider the background, maturity and ability of each pupil taking part in the experiment. In all studies involving human nature measurements of abilities, background, etc., are of necessity only approximate. This is recognized at the beginning, but efforts were made to equate the control and experimental groups as closely as was possible under practical circumstances.

Work Done by Others in the Field

While there have been many scientific studies of deaf children, and many others dealing with the teaching of reading, studies of teaching reading to deaf pupils have been largely limited to brief informal investigations. Some of these have been reported in the *Volta Review* or the AMERICAN ANNALS OF THE DEAF. Brill[1] developed and standardized a series of Visual Language Tests for the deaf. These were designed to measure the language ability of the deaf

[1] R. G. Brill, "The Prognosis of Reading Achievement of the Deaf," AMERICAN ANNALS OF THE DEAF, 86 (May 1941), 227-240.

child below the level of such standardized tests as the Stanford Achievement Tests. In this study Brill found that the results of former investigators were confirmed, when they found that age of onset of deafness below six years had no effect on the amount of language learned in a one year period. Brill further found that over a five year period this was true also. He finds that after five years a partially deaf group had no advantage whatsoever over a totally deaf group. He quotes former investigators as finding a statistically significant difference, after one year, favoring pupils with partial hearing. Brill offers an explanation of his findings, in that innate intelligence may be a more important factor in the learning of language than the amount of residual hearing after the language has reached the complex stage. Finally Brill found that his tests can make excellent predictions of the deaf child's ability to learn language, if administered between the ages of seven and eleven years. He concludes that if the test gives an educational quotient of less than 80, the child has poor chances of becoming proficient at language, regardless of quality of teaching during the next five years. But if he has a quotient of over 80, the chances are only one in ten that his score on the Stanford Reading Battery five years later will be below the lowest quartile.

Gates[2] studied the ways in which the achievement in reading differs for deaf and hearing children. He conducted experiments at the Lexington School for the Deaf in New York, from which he concludes that while learning to speak is very difficult for the totally deaf child, he should be able, under adequate instruction, to learn to read as early and as easily and as rapidly as normal children learn to speak. Obviously this could only be achieved by skilled instruction at a very early age.

Thompson[3] reports an experimental study of the ways in

[2] A. I. Gates, "Methods and Theories of Teaching Reading, Tested by Studies of Deaf Children," *Journal of Educational Research*, 14 (June 1926).

[3] H. Thompson, *Experimental Study of the Beginning Reading of Deaf Mutes*, Teachers College Contributions to Education, No. 254, 1927.

which new words should be taught to young deaf children. The experimental groups were made up of young deaf children six and seven years of age. She used a method of instruction which she claims accomplishes about ⅝ as much in a school year as would be accomplished with a hearing group of average children of the same age.

At the Missouri School for the Deaf a study was conducted to measure the results of a year's training with the Metronoscope.[4] The results of this training were measured by means of the Ophthalmograph. Experimental and Control Classes were used to study the effectiveness of a Metronoscope in teaching reading to a selected group of pupils spread over a considerable age range. This study shows that a Metronoscope can be used without fear of over-taxing the children's eyes, except for pupils with subnormal vision. In the Control Group, a gain in speed of 28 words per minute was found, while the Experimental Group gained 44 words per minute. The Metronoscope also produced a gain in comprehension, as measured by a brief comprehension test accompanying the Ophthalmograph test. It was concluded that systematic practice with the Metronoscope will produce substantial gains in reading efficiency.

The present study differs from those cited above in a number of important respects. Brill was primarily concerned with the development of adequate tests for measuring language ability, while the present study attempts to measure the efficiency of different teaching methods. He further attempted to develop an instrument for predicting success in language work during the next five years of a pupil's school life. Prediction of future success has no place in the present study, but rather the development of more effective teaching techniques, which will produce measurable results at the end of a single school year.

Gates was primarily interested in the teaching of reading to normal children, but he felt that the deaf offered an excellent laboratory for testing new techniques. His problem

[4] J. A. Gough and G. C. Farquhar, "An Experiment in Controlled Reading," AMERICAN ANNALS OF THE DEAF, 83 (September 1940), 355-361.

deals with the teaching of beginners, while the present study was limited to children in the Intermediate and Advanced Departments of the Pennsylvania School.

Thompson also was concerned with the teaching of beginners. The valuable work done by her and by Gates in the field of Primary School instruction, indicated a need for a study in the Intermediate and Advanced Classes. It therefore seemed unnecessary in the present study to include experimental work in the Primary Department. The work here reported is limited to children between 11 and 19 years of age.

The experiments reported above were all conducted at schools with smaller enrollments than that of the Pennsylvania School. It is therefore possible in the present study to select in both the Intermediate and Advanced Departments, experimental and control classes more nearly alike than would be possible in smaller schools. This fact contrasts especially with the work done at Missouri on the Metronoscope, where pupils of a wide age range were used in the study.

Questions Which This Study Attempts to Answer

In order clearly to define the field of the present study, it was decided to limit it to answers to a number of specific questions. These were derived from the basic object, as stated above, to study the quality of reading, as it might be affected by an emphasis on speed, in the instructional practices during the school year. The following questions will therefore be given consideration in this report:

Does an emphasis on speed in classroom reading have a significant effect upon the comprehension of what is read?

Does an emphasis on speed in classroom reading have a significant effect upon the mechanical motions made by the eyes of the reader?

Does the emphasis on reading short phrases rapidly affect the pupil's ability to grasp word meanings?

Does the emphasis upon rapid reading have any effect upon his ability to grasp the meaning of a paragraph?

Do the more rapid readers among deaf children grasp the

meaning of what they read as well as those who read more slowly?

What level of reading ability can be reasonably expected of a class of deaf children, compared to a class of hearing children of the same age?

What is revealed by the achievement in arithmetic in regard to the reading growth of the groups used in this study?

Summary

Previous studies in the teaching of reading to the deaf have been conducted in smaller schools, or among younger children, and have helped to improve modern teaching of the deaf. But no study has been made which attempts scientifically to measure the growth among deaf children between the ages of 11 and 19 years, in the quality of reading that can be expected from instructional methods, especially from an emphasis on speed.

This study attempts to test four different methods of teaching reading to deaf children. In the two experimental methods an emphasis on speed is predominant over an emphasis on thorough understanding of every word read. The control classes were taught by the usually accepted methods of teaching reading in the Advanced and Intermediate Departments of the Pennsylvania School for the Deaf.

Chapter II—Procedures Used

Description of General Plan of the Experiment

At the Pennsylvania School for the Deaf, the entire student body of about 540 pupils is divided into three schools. The Primary Department includes approximately one third, the Intermediate a second third, and the Advanced Department includes the most mature 180 pupils. Adjustments are made between departments at the start of each school year, a sufficient number of pupils being promoted to maintain approximately the same number of pupils in each school.

The Principal of the Advanced Department then distributes his 180 pupils into 18 classes of approximately 10 pupils each, the basis of such distribution being academic ability. A definite effort is made to put together pupils whose educational needs are as nearly alike as possible. A similar procedure is followed in the Advanced, Intermediate and Primary Departments.

At the start of the experiment, the grouping of the classes in the Advanced Department was studied, and two classes were chosen that appeared, on the basis of certain tests to be described later, to be as nearly alike as any two in the Department. One of these classes was chosen as a control group, and the other as an experimental group. A similar procedure was followed in the Intermediate Department, but it was decided to exclude the Primary Department from the experiment, in view of the work that has already been done by other investigators, with children of that age.

The two classes in the Advanced Department were assigned to different teachers, for different subjects, but the two classes in the Intermediate Department received all their academic work under the direction of a teacher assigned to the one class for the entire day. As a result of this system, three teachers were involved in the experiment. One teacher instructed the two Advanced Department Classes, a second teacher instructed the Intermediate Control Class and a third teacher of reading and other subjects was in charge of the Intermediate Experimental Class. At the beginning of the experiment these teachers were told that it was desired to study the effect of an emphasis on speed, in the instruction in reading. Speed was to be emphasized with the two Experimental Classes, but the usual methods were to be applied to the Control Classes. Frequent conferences were held during the year, to make sure that this difference was maintained and each teacher prepared in writing a detailed plan of her work with each class during the entire year. Tests at the beginning and end of the experiment provided the basis for judging the improvement in quality of reading made by each pupil.

Selection of Subjects

It would have seriously upset the work of the school to choose from all classes a group of children whose reading ability was the most uniform, as the result of certain tests. This was a plan early discarded as impractical. The principal of each department made up the classes on the basis

TABLE I

BASIC CHARACTERISTICS AT START OF EXPERIMENT
INTERMEDIATE DEPARTMENT—EXPERIMENTAL CLASS

Pupil	*Chron. Age*	*Mental Age*	*Years at School*	*% Useful Hearing*	*Ophthalmograph Words per Min.*	*Ophthalmograph Comprehension %*	*Vision and Home Environment (1—Very poor 5—Excellent)*	
1	14-3	10-4	8-0	0	129	70	3	3
2	14-10	11-1	7-0	13	185	50	4	4
3	14-11	10-9	7-0	10	126	50	3	3
4	15-3	10-0	8-9	21	324	90	3	1
5	12-9	11-4	7-0	10	169	80	5	3
6	15-0	10-5	8-0	10	156	100	5	3
7	13-6	10-7	7-0	23	156	80	4	3
8	14-1	10-5	7-0	10	89	80	1	3
9	15-8	11-1	8-8	14	231	80	2	4
10	14-8	11-0	6-0	0	130	60	3	2
11	15-1	10-5	7-0	20	279	60	4	4
12	16-2	10-8	8-0	23	112	100	3	5
Class Avg.	14-8	10-8	7-5	13	174	75	3.3	3.2
			INTERMEDIATE DEPARTMENT—CONTROL CLASS					
1	13-8	10-8	6-0	22	109	80	2	5
2	14-7	11-10	8-0	36	162	70	5	4
3	12-10	10-7	10-0	37	200	90	5	4
4	14-2	11-0	4-4	58	222	50	5	2
5	11-0	11-9	0	41	179	90	3	3
6	14-6	10-2	7-9	34	132	50	5	2
7	13-4	11-7	6-0	28	293	70	5	5
8	14-1	10-11	7-9	27	158	90	5	3
9	11-3	10-9	1-0	61	98	90	4	4
10	13-3	11-4	3-3	10	70	90	4	4
11	15-11	10-10	7-1	35	119	90	3	1
12	14-2	12-1	5-1	50	197	70	2	5
Class Av'g.	13-7	11-1	5-6	37	162	77	3.2	3.3

of general educational needs of the pupils, rather than on the basis of reading tests. It therefore appeared to be necessary at the start to administer certain tests, in order to determine whether or not the two classes were sufficiently nearly alike to justify the experiment. A number of factors were chosen for this purpose, and the results of the tests tabulated in Table I for the Intermediate Department, and in Table II for the Advanced Department.

In the Intermediate Department, it was found that the class selected as the Experimental Class was on the average 13 months older than the Control Class. On the other hand, the Control Class, on the basis of the Kuhlmann-Anderson Test, showed a mental age approximately 5 months in advance of the Experimental Class.

TABLE II

BASIC CHARACTERISTICS AT START OF EXPERIMENT
ADVANCED DEPARTMENT—EXPERIMENTAL CLASS

Pupil	*Chron. Age*	*Mental Age*	*Years at School*	*% Useful Hearing*	*Ophthalmograph Words per Min.*	*Ophthalmograph Comprehension %*	*Vision and Home Environment (1—Very poor 5—Excellent)*	
1	15-8	11-10	8-9	0	102	80	2	4
2	15-10	10-9	8-0	11	136	90	3	2
3	15-9	11-4	7-0	19	150	80	5	3
4	15-3	12-8	7-1	11	128	60	5	1
5	17-7	10-2	7-0	21	108	60	4	3
6	15-7	11-9	8-0	18	162	100	4	2
7	14-8	11-9	8-0	21	214	100	4	3
8	15-3	10-8	7-0	0	176	80	2	4
9	15-3	11-11	7-0	15	200	70	5	4
10	17-10	11-2	12-0	20	143	90	5	4
11	17-0	11-10	7-0	0	176	90	—	1
Class Avg.	16-0	11-5	7-9	13	154	82	3.9	2.8
	ADVANCED DEPARTMENT—CONTROL CLASS							
1	16-9	11-4	8-0	28	286	100	4	3
2	18-7	10-7	10-0	0	133	80	4	4
3	16-5	12-10	0-6	14	228	100	3	3
4	18-3	11-5	11-9	0	136	80	3	4
5	16-6	13-0	10-0	0	—	70	3	4
6	17-6	11-11	10-0	18	86	100	5	2
7	16-3	12-1	-0	16	77	70	3	2
8	17-1	10-8	11-0	18	214	90	5	1
9	15-4	12-6	8-9	12	255	80	4	3
10	18-3	12-2	8-8	23	—	—	—	4
11	17-11	13-10	7-0	23	207	100	—	2
12	17-1	10-11	8-0	0	185	100	2	3
Class Avg.	17-2	12-0	8-6	13	180	88	3.6	2.9

The Experimental Class had on the average been at the School nearly two years longer than the Control Class, but the Control Class had sufficient hearing to permit the use of electrical hearing aids in their instruction, while the Experimental Class was too deaf to be reached at all by hearing aids.

The preliminary Ophthalmograph tests showed the Experimental Class to read more rapidly than the Control Class, but when tested for statistical significance, it was

found that the difference of 12 words per minute was not significant, in view of the deviations from the mean within each class.

No appreciable difference in visual acuity or home environment could be found at the start of the experiment, between these two classes. After applying statistical tests for significance to the results of these tests, only three were found to be significant.[1] The Mental Age of the Control Class was significantly ahead of the Experimental Class. There was also a significant difference in the length of time the two classes had been in school (Experimental Class in school longer), and there was a highly significant difference in the amount of hearing of the two classes, with the Control Class having the larger amount of usable hearing.

In the Advanced Department the same tests were given as in the Intermediate Department, but here the Control Class was slightly older than the Experimental Class. The Control Class also showed a slightly more advanced Mental age. The Control Class had been at school longer, could read a little faster, with better comprehension, but had slightly poorer results on the tests for visual acuity. None of the differences between the two classes had any statistical significance, however, except the difference in chronological age. The Control Class was significantly older. It would therefore be reasonable to expect more improvement during one school year from the Control Class, if age is considered an advantage. Otherwise the classes were alike, as far as significant differences on the tests used were concerned.

Selection of Measuring Instruments Used

In making the tests referred to above, and recorded in Tables I and II, a number of different instruments and tests were used. Mental Age was measured by the Kuhlmann-Anderson Test. This test was designed for hearing children, but it is not primarily a language test, and has been found useful in testing deaf pupils. A rigid test of validity was not attempted, as the purpose of this experiment is not primarily

[1] See appendix.

to compare deaf pupils with hearing pupils. The test was administered to each class under the same conditions as obtained with the other class, and the results should therefore be comparable. The fact that the test was not validated for the deaf may cast some doubt on the statement above, that the mental age of the Intermediate Control Class was significantly above that of the Experimental Class, but it is very probable that these tests are sound for measuring the mental ages of the deaf children taking part in this experiment.

The percentage of useful hearing was measured by means of audiometer tests customarily used in schools for the deaf. A complete audiogram was taken of both ears, and the percent of hearing calculated from the several frequencies to which the child responds.

Complete Ophthalmograph tests were given at both the beginning and at the end of the experiment, to measure the reading ability of the pupils at the start, and also to measure the improvements of certain abilities in reading. The Ophthalmograph is an instrument for measuring both speed and quality by photographic methods. Two small beams of light are thrown onto the eyes of a reader, and are then focused through two telescopes onto a moving film. The light beam moves horizontally as the eyes move, while the film moves at a fixed rate, permitting calculation of speed, in words per minute. The history and development of the Ophthalmograph have been fully described by Taylor[2] who used this instrument extensively with public school children and high school pupils. The individual graphs obtained supply significant data in regard to the quality of the mechanical motions of the eyes of the readers. Calculations of the following quantities were made from these graphs: (a) Speed, in words per minute, (b) Fixations, per 100 words, (c) Span of recognition, (d) Duration of average fixation, (e) Regressions per 100 words. The general shape of the graph also throws considerable light on the rhythmic habits, or lack of them, that each reader possesses.

[2] E. A. Taylor, *Controlled Reading*, Chapter II, 1937, Chicago University Press.

The makers of the Ophthalmograph supply cards to be read by pupils of each grade level. These did not seem perfectly suited to the pupils taking part in this experiment, and therefore the three teachers of reading were asked to prepare suitable material, using words these pupils should know, and of suitable difficulty. Cards were then printed in the School's print shop, and ten test questions were printed on the reverse side of each card. All the Ophthalmograph tests were administered to the pupils by the same individual, insuring uniformity of test conditions.

The Betts Telebinocular was used for testing visual acuity. The same individual administered these tests to all pupils, and from the record forms obtained grouped the pupils into one of five classes. Excellent vision was given 5, and very poor vision 1.

The teacher of each class, and the Dean, who has closer contact with parents than any other official at the School, were asked to estimate the home environment on the following basis: (1) Very poor, (2) Poor, (3) Fair, (4) Good, (5) Excellent. It was impossible, under actual working conditions, to secure a more valid estimate of home environment, as the children come from many different communities throughout Pennsylvania and Delaware, and neither time nor money was available for visits in the homes, in order to apply more rigid tests. As no significant differences were detected in the mean for Experimental and Control Classes in each department, it seems reasonable to assume that differences in home environment may be neglected as a factor in this experiment.

The instruments described above were used for measuring the characteristics of the Experimental and Control Classes at the start of the experiment. Some of them were also used at the end of the school year to measure progress made.

The Stanford Achievement Tests have been used at many schools for the deaf. Like most tests of achievement they were designed for the use of hearing children, and have been used by teachers of the deaf as a reasonably satisfactory instrument for measuring the ability of deaf children to understand the meaning of individual words, and of para-

graphs. They also measure the pupil's ability in arithmetic computation and in arithmetic reasoning. Norms for hearing children are available, permitting the conversion of test scores into grade equivalents. The Stanford Achievement Tests were administered to all pupils taking part in the experiment, and were used as the basis for measuring the four quantities referred to above.

In order to provide a check on the results of the Stanford Tests, the Pressey Diagnostic Reading Tests were also used. The speed tests were administered to all four classes at the end of the experiment, as a check on the speed tests of the Ophthalmograph. A close correlation would not be expected, in view of the different material to be read in the two tests. The Pressey Vocabulary and Paragraph Meaning Tests were administered to the Advanced Department classes in November, February and May, as a check against results secured with the Stanford Tests. These tests are so arranged that the three can be combined into a total score which gives a combined measure of reading ability.

As a further check on the other instruments, the Gates Silent Reading Test, Form "A" was administered to the Advanced Department Groups in November, and to the Intermediate Groups in May. This test measures the pupil's ability to get an accurate general impression from a paragraph which is read at a speed that is also measured by the test. As the Pressey and Gates tests were given only as a check on the results secured by the Ophthalmograph and the Stanford tests, it was not considered necessary to give all tests twice, and the results were not expected to check closely, in view of the wide range of reading matter used in the various instruments. They serve a valuable purpose, however, in helping to detect significant differences between the Control Class and its Experimental Class, at the time the test was used.

Further Limitations in the Groups Studied

Tables I and II presented above showed no great differences between the Experimental and Control Classes, at the start of the experiment, with the exception of mental

age and usable hearing in the Intermediate Department, which favored the Control Class. The Stanford, Pressey and Ophthalmograph Tests, however, afforded an opportunity for further comparing the Experimental and Control Classes before applying the various teaching techniques. In Table III is presented the results of a statistical study of the data presented in Tables I and II. In the Appendix is given a description of the method used to determine significance.

TABLE III

DIFFERENCES IN CLASS MEANS—BASIC CHARACTERISTICS
(See Tables I and II)

Characteristic	*Intermediate Classes*	*Advanced Classes*
Chronological Age	Not Significant	HIGHLY SIGNIFICANT (Favors Control)
Mental Age	SIGNIFICANT (Favors Control)	Not Significant
YEARS AT SCHOOL	BARELY SIGNIFICANT (Favors Experimental)	Not Significant
% Useful Hearing	HIGHLY SIGNIFICANT (Favors Control)	No Difference
Ophthalmograph, Words per Minute	Not Significant	Not Significant
Ophthalmograph Comprehension	Not Significant	Not Significant
Vision	Not Significant	Not Significant
Home Environment	Not Significant	Not Significant

Table IV presents the results of the tests given at the start of the experiment, in addition to those presented above in Tables I and II. The Stanford Test, The Pressey Test, and the Ophthalmograph Scores have been reduced to class averages in this table. In the Advanced Department, almost every quantity shows the Control Class ahead of the Experimental Class, although the difference is statistically significant in only four cases, as shown in Table V. The Pressey Speed Test presents a close check on the Ophthalmograph Speed Test in the Advanced Experimental Class. The Pressey Score is 1/5 the speed in words per minute, hence we have for this class a speed of 160 words per minute on

the Pressey Test, and a speed of 154 words per minute on the Ophthalmograph. The check is not quite so close on the Control Class, where the Pressey Speed is 210 words per minute, and the Ophthalmograph speed is 180 words per minute. We consequently have a significant difference in speed at the beginning, favorable to the Control Class, if the Pressey Test is used, but the difference is not significant when the Ophthalmograph Test is used. It should also be

TABLE IV

GROUP DIFFERENCES AT THE START OF THE EXPERIMENT

	Intermediate Department		*Advanced Department*	
	Experimental	*Control*	*Experimental*	*Control*
Paragraph Meaning (Stanford) Grade Equivalents	3.2	3.5	3.3	4.1
Word Meaning (Stanford) Grade Equivalents	3.3	3.5	3.7	3.7
Arithmetic Reasoning (Stanford) Grade Equivalents	3.9	3.7	5.0	5.6
Arithmetic Computation (Stanford) Grade Equivalents	4.2	3.5	4.9	6.1
Points made on Pressey Speed Test			32	42
Points made on Pressey Vocabulary Test			40	38
Points made on Pressey Paragraph Meaning Test			23	25
Total Points made on Pressey Tests			94	103
Words per minute, as measured by Ophthalmograph	174	162	154	205
Fixations made in reading 100 words (Ophthalmograph)	110	138	137	118
Regressions made in reading 100 words (Ophthalmograph)	17	29	26	21
Duration of Average fixation (Measured in Seconds)	.34	.35	.30	.31
Span of Recognition at each fixation (in words)	.98	.78	.74	.92
Comprehension Test Score, in %	.74	.77	.81	.88

noted that in both ability to do arithmetic reasoning, and arithmetic computation, there is a significant difference between the two classes in the Advanced Department, favoring the Control Class. The Ophthalmograph Tests showed no significant differences in the Advanced Department except in the Span of Recognition, which also favors the Control Class.

In the Intermediate Department, however, three quantities show significant differences. All three of these favor the Experimental Class, and tend to counteract the fact that the Control Class was significantly ahead in Mental Age and in amount of usable hearing. We find from Table V

that the Intermediate Experimental Class is significantly ahead of the Control Class in ability to do arithmetic computations, and on the Ophthalmograph, in Regressions per 100 words and in Span of Recognition.

These additional tests at the start of the experiment give

TABLE V

DIFFERENCES IN CLASS MEANS
(Group Differences at Start of Experiment)
(See Table IV)

Characteristic	*Intermediate Classes*	*Advanced Classes*
Paragraph Meaning—Stanford	Not Significant	Just Fails of Significance
Word Meaning—Stanford	Not Significant	No Difference
Arithmetic Reasoning—Stanford	Not Significant	SIGNIFICANT (Favors Control)
Arithmetic Computation	SIGNIFICANT (Favors Experimental)	HIGHLY SIGNIFICANT (Favors Control)
Pressey Speed Test	Not Applied	HIGHLY SIGNIFICANT (Favors Control)
Pressey Vocabulary Test	Not Applied	Not Significant
Pressey Paragraph Meaning	Not Applied	Not Significant
Total—Pressey Tests	Not Applied	Not Significant
Words per Minute, Ophthalmograph	Not Significant	Not Significant
Fixations per 100 words	Not Significant	Not Significant
Regressions per 100 words	BARELY SIGNIFICANT (Favors Experimental)	Not Significant
Duration of Fixation	Not Significant	Not Significant
Span of Recognition	SIGNIFICANT (Favors Experimental)	SIGNIFICANT (Favors Control)
Comprehension	Not Significant	Not Significant

additional reasons for the statement that in each department the Experimental and Control Classes were equivalent, within practical limits. Where slight differences exist, they favor the Control Classes, so that if gains made during the year prove to be equal, or only insignificantly different, we may infer that the experimental teaching methods are the more effective.

Description of Teaching Methods Used with Each Class

In the Intermediate Department the regular reading program of both classes consisted of a study of books, newspapers, chart stories, work books and materials written by the pupils themselves, such as news items, letters and themes. Free reading of Library books, pamphlets and newspapers out of school was encouraged, but as in any boarding school, the daily schedule was very crowded, so that all the pupils were under constant pressure of activities other than voluntary reading.

The teacher of the Intermediate Control Class was asked to express her approach to the teaching of reading. She prepared a statement, which indicated that she thinks of reading skill as involving the development of word recognition, proper eye movements, speed, and comprehension, since "Understanding is the primary goal in reading, and must be placed above everything else." She endeavored to build up a background for comprehension through the teaching of language principles, the building of vocabulary, the carrying out of experiments, the discussion of current events and of personal experiences, work related to excursions, telling of stories, and frequent use of the Thorndike-Century Junior Dictionary. This teacher stated that she did not stress speed as she did the other factors, because she believes that the development of the right kind of speed depends on the other three factors—comprehension, word recognition and proper eye movements. She stressed also a constructive attitude toward reading, and stated that the class was as a whole very co-operative. She reported a few complaints from pupils on the Pressey test, as they objected to eye strain in connection with it, but on all other tests the pupils did their best, with enthusiasm. The books used in this class were of Grade III difficulty. She lists the following specific methods used:

Silent reading followed by oral and written exercises.
Oral reading.
Reproduction of what has been read.
Dramatization of stories.
Free reading of library books, pamphlets and newspapers.
Story telling, for interest, imagination, concentration, etc.

Vocabulary building.
Word analysis.
Phrasing and development of proper rhythm in reading.
Use of tables of contents and index.

The teacher of this class stated her objectives for the year as follows:

To increase the interest in reading.
To develop better reading habits.
To increase reading skills such as Comprehension, Fluency, Speed.
To develop initiative and independence in choosing things to read.
To develop wise choice of materials to be read.
To help the child learn the proper care of reading materials.
To teach the importance of reading in learning and recreation.
To use reading for better command of language.
To use reading for broadening his knowledge and experience.

In the Intermediate Experimental Class, the teacher was a young lady of 8 years' experience in teaching the deaf. The work of this class was similar to the work of the Control Class, except that there was a constant emphasis on speed, and the "Flashmeter Technique" was regularly employed throughout the year. For part of the year, a flashmeter was actually used, but at other times the teacher used a lantern, flashing it on a screen for brief periods. At first a group of three word phrases was presented for one second. If all the pupils could not read these three words in one second, it would be flashed a second time. Tests were devised, to be checked by each pupil, to show whether or not he had grasped each phrase. About 25 three word phrases, such as "In the Closet" or "Behind the Bookcase" made up the first group. During the year fifty one groups of phrases or sentences were used, of increasing difficulty. The teacher constantly exercised her judgment in regard to necessary repetition of words that did not seem to be completely understood. As each group was used in the classroom, the teacher kept a careful record of the errors made by each pupil. Sometimes responses were merely written answers to questions, while at other times sketches were used to correspond with the lantern slides, and these sketches were marked by the pupil in appropriate ways if the pupil understood the phrase. Toward the end of the experiment, the work had increased in difficulty until five seconds were allowed for reading twenty-word sentences. The last group consisted of five

such sentences, followed by a test of 10 written questions on the content of the five sentences.

While this experimental variable was applied to the class for ten or fifteen minutes, four days each week, the regular instruction in reading continued. The goals for the year were comprehension and the improvement of habits of reading. The teacher of this class clearly separated three types of reading: (a) To obtain information, (b) To follow directions and (c) Reading for fun. The material for training in study was on the third grade level, but the reading for fun was on second grade level. At the end of the year this class could, in the opinion of the teacher, read third grade material quite easily.

As each of the classes in the Intermediate Department received all of its academic instruction from a single teacher, it was possible in each class to co-ordinate the teaching of reading with instruction in oral language, arithmetic, geography, speech, speech-reading and writing.

In the Advanced Department, the Experimental Class and the Control Class received their reading instruction from the same teacher, but received all other instruction from other teachers. While this prevented the co-ordination of the reading instruction with the other work, it had the advantage of removing whatever uncontrolled variable existed in the Intermediate Department due to differences between the two teachers, in personality, efficiency or personal and professional effectiveness. The teacher of reading to the Advanced Department classes was a lady in her early sixties, who had devoted her life to the teaching of language and reading to the deaf. At the beginning of the course, she made available to the pupils of the Experimental Class about fifteen books from which to choose, and as the year progressed, others were added. Some of the books were *The Raindrop, Japanese Fairy Tales, The Real Story Book, Prince and Rover at Cloverdale Farm, Clematis* and *Cowboy Tom.* These books varied in length from fifty to two hundred and fifty pages. Forty-five books were made available during the year, and a careful record kept of the number of pages read by each pupil. The fewest books read was seven,

and the most was fifteen. The average number of pages read during the year was 1671, with an average of 163 words on each page. Occasionally the pupils were asked to go to the blackboard, and write brief reports on a book which had been completed. Sometimes the teacher detected an attempt to write up a story which had not been understood, if read at all. The teacher would then require a re-reading before the pupil was permitted to start another book. Usually, however, no rigid test was given, and the general idea was "All right, now take another book, and read it as fast as you can." The time available for reading instruction was very limited. The teacher of reading was assigned one fifty minute period, five days a week, with each class, but during this period instruction in English, speech and speech-reading was given also. These pupils also received instruction from other teachers in science, history, geography, current events and physical education. In addition to these academic subjects, each pupil spent one third of his working day at the vocational school, working in the shops and learning a trade. The Control Class had the same schedule as the Experimental Class, except for different hours of the day at different subjects.

With the Senior Control Group the teacher used methods she had developed from her own experience of many years. The basis of her method was a careful study of each book read, assignments of specific pages to be read outside class, and a discussion in class of any words that were not familiar to the pupils. Naturally the amount of material covered intensively and thoroughly was more limited than that covered in the Experimental Class. As rigid assignments were given, there was little incentive for "Outside Reading." The work covered in class was limited to 98 pages of *Everyday Classics,* Baker and Thorndike, Third and Fourth Readers.

Summary

The general plan of the experiment was based on a selection of two classes in the Intermediate Department, and two in the Advanced Department of the Pennsylvania School for the Deaf, for a study of teaching methods. One was

chosen as a Control Class, and the other as an Experimental Class. Extensive tests showed these classes to be very closely alike, in their respective departments.

A series of tests was applied at the beginning of the experiment, consisting of Stanford Achievement Test, Kuhlmann-Anderson Intelligence Test, Gates and Pressey Reading Tests, and the Ophthalmograph. Data were also secured on age, length of time at school, visual defects, home environment, etc.

The two Control Classes were taught for the school year along conventional lines, by experienced teachers, who set up definite goals for the year's work. In the Intermediate Department the Experimental variable applied consisted of lantern and screen work, emphasizing speed. In the Advanced Department, the Experimental Class was constantly urged to read more and more books, rather than intensively studying a smaller amount of material.

At the end of the year, the tests were repeated, and improvement noted. The results of these tests were then studied, in order to obtain answers to the questions propounded at the beginning of this report. The following chapters will deal with the results, and with conclusions.

(To be concluded in the May issue.)

Co-ordinating Lip-Reading and Speech with Current Events

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IMPORTANCE *of Current Events.*—Today we can't expect school to go on as usual. Our efforts must be directed toward the needs arising from the war. It is the teacher's job to be a morale builder, to prepare the pupils to accept cheerfully restrictions placed upon us, to show each individual how he may share in the war effort by saving, giving, co-operating, and working.

The study of Current Events provides the information necessary for an active interest in the war's progress. It makes known our nation's needs and requests, and emphasizes our ideals of freedom and progress. Now more than ever before Current Events might provide the material for speech and lip-reading exercises.

Speech Aims and Current Events.—Having something to say is the most important aspect of speech. The purpose of oral expression, as with any form of language, is to enable an individual to impart ideas. First, he must have knowledge which gives rise to such ideas. For the pupil to have the desire to say something, and to have a reservoir of thoughts which might be expressed is essential for successful speech development and correction. Consequently, teachers of speech might do well to provide information as well as correction in their efforts to obtain better speech. The use of Current Events in special exercises offers this information, and should increase the desire to impart ideas. Also, it provides a base for correctional procedures.

Lip-Reading Aims and Current Events.—The interpreting of meaningful thoughts is the aim of lip-reading. The acquiring of meaningful information precedes interpretation. Words, language forms, and a basic knowledge of the ideas to be interpreted all must be learned before lip-reading of such subjects can become useful in spontaneous conversa-

tion. The lip-reader must know something about the chief topics of conversation, and also the language, including proper names which are involved. The topic which is upon the lips of everyone, and which most vitally affects our lives is the war. The personalities, places, ideals, and events that we associate with the present struggle are not only the most interesting to the average person, but also the most important. About these things, the lip-reader needs information if he is to share in the everyday discussions going on about him.

Relationship of Current Events to Speech and Lip-Reading.—At least for more advanced pupils in schools for the deaf and classes for the acoustically handicapped, the study of current events and practice in speech and lip-reading bear the closest relationship. Speech and lip-reading efficiency depend upon practice, and the topic most common in conversation affords the greatest opportunity for practice both in and out of the classroom. In the ordinary conversation today, he who is informed in current events has the greatest fund of knowledge from which to speak and most cue words in mind to help him read lips.

Systematic drill on element positions and speech patterns form the scientific basis for speech and lip-reading work. Usually these fundamentals are learned in the earlier school years before a normal interest in current events arises. Once a knowledge of fundamentals is gained, practice approaching conversational style grows in importance. Perhaps of equal significance with practice in developing conversational ability is the gaining of facts which are commonly discussed in everyday speech. Speech and lip-reading lessons built around events of the day provide both practice and information.

Review of speech and lip-reading fundamentals and continuation of correctional procedures need not be sacrificed by the employment of current events as a base subject. Words, phrases and expressions, arising from topics of current interest provide the most practical of material for speech and lip-reading exercises.

Methods of Presentation

An Informational Period.—A period used solely for the gathering of information provides an excellent preparatory base for speech and lip-reading exercises.

One method suitable for providing this period is to pass out the front sheet of a daily newspaper to the pupils. The events which will be common conversation for the day are likely to be headlined. Two or three minutes scanning the large print, and seven or eight reading the first few paragraphs of several articles should provide a basis for class conversation with opportunity for a variety of practice and correctional procedures.

Occasionally magazines suitable for young people and dealing with current topics might be substituted for the daily paper. Articles to be used in class exercises might be checked for reading, or a number of articles from which the pupils might select one or possibly more might be checked.

Round-Table Contributions.—After the reading period, each pupil may contribute some thought which he has read, or which has been of special interest to him. If more than one has selected the same thought, the second pupil can add to the first or express some personal opinion about it. Pupils, other than the speakers, are expected to read lips. Questions occasionally asked members of the class by the teacher check upon the degree to which lip-reading is efficient, and at the same time aid in keeping attention. The speaker may sometimes be interrupted to give certain corrections. However, care should be taken by the teacher not to interfere with the spontaneity of speech and lip-reading. The teacher should keep a record, if only mentally, of words and sentences that have caused difficulty. Corrections and drill in the corrected form may be given at the end of the period or saved for a later time.

Information and Discussion Based on Cue Words.—The teacher may write a list of ten or more words on the blackboard. These are cue words. The pupils are expected to find out something about each word during their reading. In the discussion period the teacher may ask one or more

questions using each of the cue words. It is better that the questions refer directly to the material just read. However, an occasional review question may be added.

The pupil ordinarily will reply with only the short answers. This is the normal way of reacting to direct questions. For conversational practice, however, it is better that the pupil use the short answer as a base for an additional statement. For example: Cue word—General MacArthur. Teacher's question—In what country is General MacArthur now staying? Short answer—Australia. Pupil answer—Australia is one of the United Nations. The pupil-answer provides lip-reading practice for the other pupils and may be corrected for language and speech.

At times it should prove valuable for the teacher to require the pupils to repeat the questions asked and to reply in full sentence answers. It should be recognized, however, that this procedure is for language and speech correctional purposes only, and is not otherwise an attempt to stimulate conversational ability.

Instead of asking questions, the teacher may make statements using each of the cue words. These may merely be repeated by the pupil, or may be repeated and followed by an additional statement adding to the thought of the one given by the teacher.

Statements built around cue words may review previous lessons as well as material just read, or the teacher may use this opportunity to give added information concerning the cue words.

Pupil-Initiated Discussion Around Cue Words.—Instead of the teacher's asking questions or making statements using each cue word, as in the previous methods of presentation, the pupils may use the cue words in current event statements or questions. One pupil may ask a question using the cue word and another may answer it. To use the same cue word in a complete sentence answer gives valuable drill in the lip-reading of difficult names and phrases. This repetition is an important factor in lip-reading. However, the short answer, or one that adds to the short answer with additional information or questioning, more nearly simulates normal

conversational conditions. All three answer methods have their place according to the needs, abilities, and maintained interest of the pupils.

For the pupils to build their own statements and questions encourages thought which both fixes bits of information in their minds and builds a field of possible reactions to cue words. This prepares the mind for good lip-reading.

Correction Preceding Presentation.—While the above method accepts uncorrected speech and language from the pupil in order to determine where correction and drill are most needed, another procedure makes corrections preceding any oral discussion.

In this plan, the cue words and difficult phrases are used as a separate speech exercise before the reading period. They may be spoken separately or better within sentences.

After the reading of the news, the words may be written into sentences and corrected for grammatical construction. The corrected sentences may be written upon the blackboard, or better, upon separate cards. These cards may then be distributed to the pupils. Each pupil silently studies his corrected sentences, and then each in turn presents one or more to the class for lip-reading. These cards should not be read, but turned face downward before the sentences are given orally. This develops memory and gives training in speaking correct language. Speech and lip-reading depend a great deal upon mastery of correct language forms. Any means of improving general language ability also has its effect upon oral communication.

Thought Association Without Repeating Cue.—The same methods of presentation as previously described may be used in this lesson type with the exception that the cue word is not contained in the statements or questions. The cue word prepares the mind for lip-reading without being used itself. For example: The cue word may be "Mussolini." Statements pertaining to this word may be: The dictator of Italy was a friend of Hitler. Il Duce was the ruler of Italy. The Premier of Italy lived in Rome. This type of lesson develops mental alertness so necessary to lip-read from cues as presented in out-of-school activities.

Using Current Event Questions as Guides to Information Lip-Reading and Speech.—The teacher may write questions dealing with current events on the blackboard. These sentences serve as a guide during reading periods. Then a pupil or the teacher can repeat the questions orally to be answered by the class. Also, changing the questions into statements may provide material for speech and lip-reading practice.

The questions may also serve as a discussion guide. The teacher may consider the questions separately and use each as a base about which to build other sentences. This is a means of giving additional information to the pupils, and also provides excellent lip-reading practice.

The pupils may use notebooks to advantage in copying the questions and writing the short answers, or in answering the questions in complete statement form. This gives valuable practice in acceptable language forms. These questions can be used weekly or monthly in review.

A Newscast.—An excellent lip-reading practice lesson is presented in the form of a newscast. The materials from the front page of the daily newspaper naturally form the basis for such practice. Sentences built around cue words, but not directly in the news may be used to familiarize pupils with lip movements to be used in the newscast. Then, an item-by-item account of the day's most important happenings can be given by the teacher. Certain pupils then may be able to try the newscasting. With more advanced pupils merely a quick review of cue words following a news reading period will prove sufficient preparation for the newscast.

Biography and History in the News.—During some weeks, the sameness of the news may become monotonous. At such times, a biography of some currently prominent person, or the history leading to some event or place in the news adds to the lip-reading program. If it arises naturally out of the day's news, it provides the greatest interest. The birthdays of famous men, and historical dates, as they occur on the calendar, provide the opportunity to present such lessons. The usual methods of presenting lip-reading stories may be used in such instances. Retelling the recent news events by the pupils promises to give good practice.

Lessons on Special Topics.—Interest and variety are added to lip-reading and speech classes by occasionally presenting some lesson in lip-reading form about certain sections of a newspaper or magazine other than the headlined news. Lessons on the stock market, want ads, editorial page, obituaries, special features or other news departments often prove of definite value. The most significant facts of current interest and importance are often delegated to the back pages. The sensationalism of front page news often needs the support of less exciting factual information. Current events are reflected in almost every human interest. This relationship can be demonstrated in lip-reading material, and from the source of expressions and language for speech exercises.

As intelligent conversation depends upon reliable and pertinent information, the teacher of speech and lip-reading might share the responsibility of guiding pupils in uncovering such facts. Therefore, lessons involving back pages of the news may play an important part in the program.

Very interesting and enlightening speech and lip-reading lessons may be based on specific types of information. Some such topics may be: Figures in the news; Women in the news; Oddities in the news; Local news; Science in the news; Geography in the news; Unsung heroes; Dogs in the news; News about food, and the like.

A knowledge of specific facts and figures is enlarged by such lessons. A better understanding of the headlined news is thus obtained. Also, it gives an opportunity to give speech and lip-reading practice in frequently occurring names and numbers which might otherwise be slighted.

Reading Aloud from the Newspaper.—For acoustic classes, especially, a short period every day or two spent in reading aloud from the newspaper has a place in the lip-reading and speech program. This gives experience in co-ordinating sound with lip-reading. It teaches common but often neglected current expressions. With some classes, it may be advisable first to go carefully over the reading material and give some explanations about certain expressions and items of news before reading aloud. Following a reading period, questions about the articles should be asked. Also, additional explanations should be given.

To have the pupils prepare short items of news for reading aloud often provides valuable speech practice, as well as fixing bits of information in their minds.

Reading aloud sometimes helps also to show that reading is a matter of interpreting phrases and sentences, and not a matter of selecting separated words, as is sometimes the habit of acoustically handicapped children. Stress should be placed on arriving at the meanings of words from the context of the sentences or paragraphs. Thought processes involved in placing meaning upon the unfamiliar by its relationship to preceding and following ideas are as vital to lip-reading as to reading and language building.

Maps, Bulletin Boards.—Maps have an important part in the presentation of news. While reveiwing the day's news, it is important that the teacher point out on the map where each event occurs. Such cues are always a help in lip-reading, and in the general understanding of the news. Maps should also be conveniently located so that pupils may fortify their informational reading periods with an occasional look at the map.

Now and then a complete lesson may be based upon the map. At such times, questions concerning location and strategic importance of countries and cities, etc., may be asked the pupils, or explained to them. News may be reviewed by pointing out places on the map and getting responses from the pupils as to why such places are currently prominent in the news.

Educational weekly news maps may be obtained and are of some value in reviewing the important events of the preceding week. Here the events are given in brief and numbered with corresponding numbers on the map. Such maps may guide the teacher in an oral account of the news. Also, certain stirring statements by our leaders and copies of popular war songs might well occupy decorative positions in the school. Practice in reciting at least parts of such "cornerstones of American Liberty" should play a part in the speech program.

Lip-Reading—Current Event Games.—Games always add spice to a program and keep interest alive. They are also an excellent means of reviewing information. Any number

of games may be arranged. Two excellent games used to review current events materials are:

1. The teacher may lead by thinking of some important person, place or thing. Going around the class each pupil asks a question until the answer is known. For lip-reading purposes the teacher ordinarily will repeat the question asked, and then answer it in complete sentence form. This helps make sure that the next pupil knows the question asked so that he may continue toward finding the answer. For example:

Teacher: I am thinking of an important person.
Pupil: Where does he live?
Teacher: Where does he live? He lives in England.
Pupil: Is the person named Churchill?
Teacher: Is this person named Churchill? Yes, this person is named Churchill.

2. A game of considerable informational value, and which offers a great deal of speech and lip-reading practice is the quizz program. Here the teacher first asks one team and then the other current events questions. Also, the two teams make up and ask questions for their opponents to answer. In this case, the teacher is merely umpire, making the rules and seeing that they are observed.

Excitement is usually added to games by placing them on a competitive basis. It is better for the class to be divided into two or more teams than to leave it to individual competition. In this manner, the arriving at the correct answer is a matter of team work.

Room Decorations.—The decorations of the schoolroom may also reflect the atmosphere of our nation in the current state of affairs. Pictures inspiring patriotism may be placed upon the walls. An American flag might well be standard equipment of any speech and lip-reading room. The Pledge of Allegiance, the Declaration of Independence, Bill of Rights, Gettysburg Address, Articles of the Atlantic Charter, The Star Spangled Banner, could all be used to good advantage.

Conclusion.—To the above methods of building speech and lip-reading lessons about items of current importance others may be added. However, the suggestions here given

are sufficient from which to make selections for a full program. At this time our whole national effort might well be directed toward winning the war.

The study of current events plays an important part in building morale, and intelligent understanding of our duties as freedom loving Americans and at the same time may provide appropriate material for speech and lip-reading practice.

The Teaching of Printing

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THE NECESSITY of vocational training for deaf children is a conceded fact, but not so readily meeting with concurrence are methods, paraphernalia and branches of that general theme. Locations of the schools wherein the pupils receive their instruction and training play a part in the selection of the various trades to be taught. Budget limitations and work most commonly done are dominating factors in deciding the tools of the trade. Personal experiences and studies by instructors and school heads play a decisive part in deciding the methods of instruction used.

Using printing (a general term embracing all types of composition and presswork, etc.) as a medium, this paper will attempt to follow a boy through his vocational course, pointing out what he has to learn and why—and suggesting how he might do it. Locations of the various schools can hardly be changed; budgets are almost equally adamant, and so we shall try to concentrate on methods.

* * *

The average American school for the deaf provides a course in sloyd or some related subject as a pre-vocational course. The aim of this is to develop in the pupil a sense of co-ordination, respect for his tools, and appreciation of good workmanship. It serves as a transition course wherein children learn to do things for useful purposes as compared with their usual practice of doing things for the immediate pleasure of merely doing something. It stresses the result as well as the means. This, then, may be called the breaking-in period of vocational education as taught in residential schools for the deaf.

After the child has spent a few years in a pre-vocational class he is transferred to regular vocational classes. The trade he enters is decided by his own personal choice modified by his intructor's and the boys' general counsellor's opinions.

The vocations offered vary in the different schools, but practically all offer printing and woodworking. These are generally considered the two main vocational courses. Others include practically every field of training that is termed vocational.

Now supposing a boy leaving pre-vocational work, having reached the age and/or degree of ability whereby he is deemed advanced enough for regular vocational work, enters the class in printing. Invariably, the first thing he will want to do is run a machine, usually the linotype. When he is refused this on the grounds that he has to learn the fundamentals of the trade first, *i.e.*, shop language, hand composition, type sizes and the point system, etc., he feels frustrated and shows mild evidences of rebellion. He feels that after a few years of pre-vocational work, he should be permitted to do as he pleases when he reaches the regular vocational stage. This tendency must be subjugated in such a manner as to cause him to lose none of his interest in the work. I have found that one of the best ways to do this is to assign each new boy to a boy who has already had several years of training and has mastered the fundamentals. This "tutor" can help more than the instructor himself, for he can teach by example and can more easily reach the level of the newcomer, having left the stage but a few years before. And at the same time, he will be learning more himself than if he merely attended the class as usual, for he will profit from his charge's mistakes and problems.

One of the first things to be mastered is the language used in the course. Without this, the pupil is severely handicapped in learning the trade. He can, of course, learn without regular shop language, signs being the substitute. But this is not very useful to him, for it suffices only as long as he is in school. After he leaves, he will have to learn shop language to get along in any outside plant, and in normal times, very few shops can spare the time to teach a deaf man something he should have learned before and while he learned his trade. A good idea is to devote the first fifteen minutes of each shop period to shop language discussion. I

say discussion because it is through this that the boys learn most readily; if language were taught as it is in classrooms, it would be considered as such and hardly as an adjunct to the trade. This would make it less readily acceptable. But when shop language is used in a conversational way, with the boys asking questions when they do not understand some word or phrase, it becomes more significant, more natural, and more readily absorbed. For the new boy, intensive drill must first be given so that he can join the discussions at the earliest possible time.

After shop language comes general printing fundamentals. The basic practices of the trade must be mastered completely, for they form the groundwork for all subsequent work. It has often, and correctly, been said that if the school gives but a thorough knowledge of the rudimentary and essential principles of a trade, it has accomplished almost all that is required of it. But the schools should strive to do better than good enough. To turn out a rough product and trust subsequent employment to do the polishing suffices; but if the school can possibly do any of the smoothing of rough edges, it should. The deaf boy seeking employment after he has finished school will have enough problems to face without this.

Hand composition can be made interesting enough to keep the boys busy at it until they become adept at the various kinds of work, such as billheads, letterheads, tabular work, programs and general advertisements. It may be argued that most of this type of work is done on ludlow, monotype, and linotype machines, but it must be borne in mind that a printer must operate these machines. To do so with any degree of skill and rapidity, he must know what he plans to produce, must visualize the result he wishes to achieve, which same he learns to do while practicing ordinary hand composition. Hand composition is to printing what the alphabet is to language.

One of the knottiest problems the printing instructor has to face in this and subsequent stages is teaching a boy with insufficient knowledge of mathematics. Addition, subtraction, division, multiplication and fractions are all involved in

printing. Added to this is the point and pica system which the boy must know. If he has difficulty with ordinary mathematics, he finds it impossible to secure accurate justification on complicated jobs, and has trouble with even simple ones. It is advisable that any boy who plans to follow printing as a vocation be given intensive drill in arithmetic in academic classes, for the printing shops usually have little time to take care of it.

After the boy masters hand composition, he must learn to transfer onto paper what he has set up in type. Lockup of job press forms comes first. This is very simply mastered once the principles of justification are understood. Folio work involves more complications, however, because the boy must consider the number of pages and subsequent placing of type matter in the forms; the size of the type page as compared with the size of the paper page, and proportionate spacing between the pages of type; proper quoin placement, etc.

After lockup comes actual presswork. The job press receives first consideration, and here the boy meets make-ready problems—centering type, centering imprint, guide pin adjustment, proper inking, proper packing, proper degree of impression, offset control, two color printing, and a host of other problems too numerous to cite. Following ordinary job press work comes cylinder press work or linotyping, as the boy desires and as the instructor deems best suited. If the boy goes out for further presswork he learns the more intricate details of the craft, usually on a Miehle press, sometimes on a Kelly. He also may learn automatic press work. The boy who chooses linotyping first learns straight matter composition, then gradually learns to set practically every kind of work possible to set on the machine. Few schools teach monotype or ludlow work, but these can be mastered with no difficulty by the boy if he is proficient in hand composition and linotype work.

The boy having come this far has one more thing to do. That is to practice, practice, and practice some more. This will give him the familiarity and confidence he needs to make a good workman. Be it presswork, floorwork, or ma-

chine composition, practice is the only thing he needs after he has mastered the basic principles. The practice should be varied and interesting. And it should not be just "busy work." It should be work that has to be done; for then the result will be more significant, and the means more painstakingly observed and profited from. It is a common practice to keep repeat forms standing to save time, but I find that killing a form after each job is more expedient because the boys will then have more real work to turn out. A standing job entails little or no work to re-print, whereas resetting the whole thing and making it ready for the press gives valuable experience.

Another thing boys should learn to do is to mark their own copy. Usually shop foremen or advertising men do this, but often a boy secures employment in a small shop which depends on its working crew to do its own type selecting and size determining. After the boy learns to read the instructor's markings, he should be given jobs to mark up himself until he develops a sense of balance and artistic arrangement of type.

The boy who learns all the things stated above is exceptionally well grounded in typographic arts when he leaves school. Most boys do not master all this. But even if they only get a little of each of the things mentioned, they will profit from them. The method of teaching, conditioned by the pupil's mental capabilities and desire to master the trade, are more important than the paraphernalia. It is for this reason that instructors should give their best to make their courses interesting and helpful. The deaf in general work in vocational lines; the responsibility on the vocational instructor is very great. May they keep up the work they have been doing.

The Habitual Present

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I

AN EXAMINATION of the sources will show that a very large portion of our informative reading comes to us expressed in the habitual present tense.* (A look into the encyclopedia will convince the doubting.) And in our school textbooks, with the exception of history, this tense is employed far more than any other. Our geographies, for example, tell us that rivers *flow*, mountains *extend*, and articles *are manufactured* in ————. The arithmetics say that persons *buy* and *sell*, and that they *earn* and *spend*. In our health books we read, ". . . the blood *flows* so fast that it *makes* the entire round of the body three times in a minute." And thus it goes.

Yet in spite of this we lead our deaf children to use the past tense in their original work, with little variation, for the first four or five years of school. In their letters home, in the news items and in the stories, it is the past tense over and over. It would seem that having begun using this tense we just keep going from the force of the swing that way.

This doesn't mean that there isn't hearty approval here of starting beginners in the past tense. The events, as we know, are past before a child can tell his teacher, I ran, Tom fell or Fred caught a ball. The past is the only tense in which a child can express himself spontaneously—and we surely want spontaneity more than anything else. The past tense serves the early needs; then by all means use it first.

But as time goes on, need for the habitual present increases. As we have seen, deaf children are veritably submerged in it when they begin to use textbooks. (It is pretty evident that their woeful entanglement with the language of books is due in part to a lack of familiarity with this tense.) They will need it later, also, to understand magazine and newspaper reading and to express themselves naturally at all times.

*So called to distinguish it from the present progressive tense.

The use of the habitual present should not, of course, push the other tenses to one side but there is, often, I think, not enough emphasis put on it in the pre-textbook stage. I am, therefore, going to present some plans being worked out in the North Carolina School, for giving the pupils more familiarity with it. Perhaps they will help some who feel as we do that it needs more emphasis.

In presenting these plans I wish to say that the work for primary grades has been done wholly by teachers in the Lower School (I teach in the Upper School), and I am indebted to them for that part of the outline.

The very first step in teaching the habitual present is given in detached sentences like: Mary has an apple, I like candy, Tom wants a ball, etc. When a child can apply these to his experiences, without help, he is ready for the next step which will be putting a little group of sentences together making a paragraph. (We call it connected language.)

To begin, the teacher erases the objects from a group of sentences leaving this written skeleton on the slate:

I have .....
You have .....
John has .....
Mary has .....
It has .....

Then with these outlines in front of the class, the teacher holds up a picture of, maybe, a cat, and says:

"Tell about the cat." A hand goes up and the pupil is allowed to say, "I see a cat." The teacher then showing the cat's mouth helps a pupil to say, "It has a mouth," and in the same way, "It has a nose, It has four feet," etc. With some halting and stumbling, which the teacher's help overcomes, a little group of sentences is evolved:

I see a cat.
It is brown and white.
It has a mouth.
It has a long tail.
It has four feet.
Cats like mice.

In another lesson the teacher may hold up a car, and in the same way, bring out the paragraph:

I see a car.
It is green.
It has two lights.
It has four wheels,
and four doors.

Pupils in the first grade (second year in school) do this work. After a little practice they can describe a dog, a man or a horse with little help. And they like it.

Another group in the same grade have these skeleton sentences in front of them:

I want .....
You want .....
John wants .....
He wants .....
Mary wants .....
She wants .....

And on a low bench, where all can see, are spread out toys of all kinds. The teacher calls a pupil and says, "What do you want?" He says, "I want a top," and he is given the object. Another stands and says, "I want a book," and he gets one. Before all wants have been supplied the teacher says to Frank, "Talk to Laura." He then tells her that he wants a car and, Laura standing, says, "Frank wants a car." These sentences may not always be written. It is the practice of repeating them over and over that enables the pupils to use the verb, to want, in the present tense.

The use of the verb, to like, can be brought out in this way. A chart showing dishes of prepared foods, is hung in view of the class and the teacher proceeds:

James, do you like ice-cream?
Pupil—Yes, I like ice-cream.
Teacher—Mary, tell the class about James.
Mary—James likes ice-cream.

Flora says—I do not like green peas and John says, "Flora doesn't like green peas." As each pupil expresses a like or dislike the sentence is written on the slate as in the instances described.

In the third year of school the lessons become a little more difficult. One pupil can then give an entire paragraph. Small cards with pictures of animals are distributed and the lesson proceeds:

Teacher—Who has a rabbit?
A child stands and says, I have a rabbit.
Teacher—Tell me about it.
Pupil—A rabbit has a short tail.
It has long pink ears.
It likes cabbage and carrots.
It can run very fast.

Another child tells about a squirrel, another about a goat, and then, leading up to the less familiar, they tell about a bear, a monkey or an elephant.

In a third grade class I saw this lesson: The teacher with a handful of cards, on which were pictures of familiar objects, gave one to a pupil and said, "Tell me about the picture."

Pupil—This is a violet.
It is small.
It is purple.
It smells sweet.
Violets bloom in spring.

As these descriptions went round the class one of the boys, after telling about a vest, added on his own: "I have no vest. My father has a vest." This application to experience suggests the very great importance of keeping the new drilled-on language attached to experience. To be sure the best way would be to give it through real experiences first hand but this is not always practicable. And we must, of course, drill and drill for there is no other way to fix correct usage in the child's mind. But in our occupation with drill and correct form, we may tend to overlook the big object of all our effort—its use in the child's daily experiences.

It is suggested here that the teacher take the class to the barn, to the pig pen, to the poultry yard, or to someone's home. Go to the woods, the fields, the parks or to a store. As they stand around, you can, helping one at a time, lead the pupils to say, I see a baby chick. It is yellow. It has a beak. It says peep-peep. At the barn they can tell you that a cow eats hay, and that she gives milk and so on. On a trip to the kitchen, I should be disappointed if some child, looking at the stove did not say, "Home" (with his finger indicating that direction). By all means let him talk about the stove at home. You may lead him to tell you something that

mother cooks. Most children like to talk of home for, thus far in life, it is the very center of their interest. They need language to cover their experience there more than any other.

This talk about possessions at home may show the need to explain the use of the pronoun, we, as applied to the family belongings. I have known children in the fifth grade to say, "I have a frigidaire at home." Possessions-in-common, in his mind were associated only with his classroom belongings. He will not, unless taught to do so, say, "We have two bedrooms, We have a large clock," etc.

Before leaving the work in the primary grades I want to speak of the correlation of habitual present with other work. It, of course, comes up in the speech-reading commands, turn on the heat, raise the shades, etc. It may be put to use, also, in matching sentences with pictures. For example, a child reading the sentence, "A girl has a cat," goes to the chart and places the sentence by the girl holding a cat. In beginning number work, the verbs to be and to have bring it in. It comes up, too, in the questions beginning, Do———? Does———? Has———? Have———? Can———? Am ———? Is———? Are———?, etc. For supplementary reading we use the first and second readers in Round the World books and books one, two and three of the Laidlaw Readers.

II

In extending the work on habitual present to the intermediate grades, we again give drill on detached sentences and, continue, also, to bring out information by discussing topics.

The meaning of time words like frequently, occasionally and seldom is taught in this way:

Teacher: Rosa, do visitors come to our school often?

Rosa: Yes, they do.

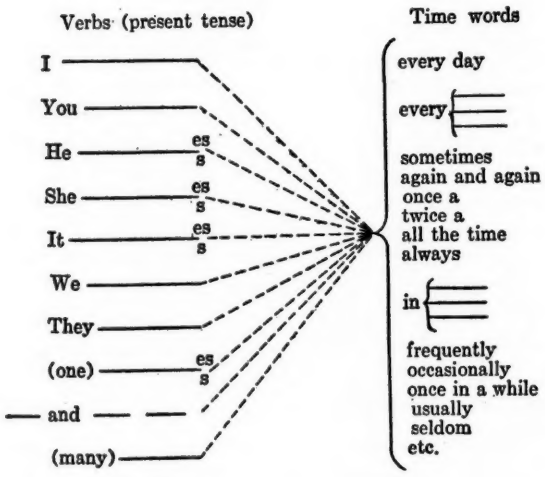
Teacher: Yes, they come very often.

After telling the class that frequently means very often, the teacher gives the sentence: We frequently have visitors at our school. Then asking around the class she may draw out such sentences as: We see airplanes flying overhead at

home *frequently*, or We go to the movies in town *occasionally*. We live near Raleigh but my father *seldom* goes there. He *usually* trades in Durham.

Filling blanks in sentences with the habitual present is helpful in determining whether to use the endings *s* or *es* after the verb.

A chart showing the rules for this helps.



(Now, to be sure, a chart is of no use unless pupils are taught to look at it and observe its rulings when doing original work.)

Coming back to the teaching of the habitual present through topics,* I want to suggest a change in presenting it. Some years ago a teacher of the deaf, visiting my classroom, said to me, "How do you get interest in topics? I give what I think is an interesting one on growing coffee in Brazil," she went on and on, "and it falls flat. No questions, no interest." Her inquiry set me thinking. The result was a decision not to begin with subjects so far afield. Children

* The word topic is here used loosely to mean subject.

should scarcely be expected to want information about something so far away that it only remotely touches their lives—coffee growing, sugar making, silk making, etc. Why not begin with subjects which catch their interest because they are close by—like Going to the Store for Mother, Making a Garden at Home, Growing Corn, wheat, cotton and what not—familiar things about which they can contribute some facts themselves? After they have learned to express themselves on familiar subjects which interest them, we can lead them step by step to the far places, attaching, as we go, the new to the old and thus carry their interest to the unknown.

A subject ideally within range of interest is the work done in our handicraft shop here—and the output carries the interest somewhat afield, out into the big world. A sample of this is given below.

WORK IN THE HANDICRAFT SHOP

We work in the handicraft shop on Tuesday and Thursday afternoons. We learn to make many different kinds of things there. We make beads, belts, buttons and bracelets. We often make them of nut hulls or of seeds.

Some days we weave on hand looms. We make rugs, mats and chair covers.

We also make toys and small pieces of furniture in the shop. Last week Floy made a broom holder and painted it brown. I shall start making one tomorrow. Yesterday Hilda and I worked on a toy bed which we are making for the State Fair. We hope to get first prize on it.

The lack of interest in topics previously spoken of comes, too, I think, from the very meager understanding pupils often have of the new words and terms which come up in the discussions. Before having my sixth grade pupils give me an account of the morning work at their homes, I found they had had almost no experience in using the verbs listed below—especially in the habitual present tense.

to get up
to make a fire
to light the gas stove
to turn on the electricity

to fill the kettle
to make coffee
to get breakfast
to dress
to listen to the radio
to read the paper

The preparation for writing on this subject consisted of practice in using the verbs in the different tenses. We dramatized them first. The boys, playing father, pretended to get up and make fires, the girls filled the kettle and made coffee; they made toast, fried bacon and scrambled eggs. And they enjoyed it. Later, in order to use these same verbs in the habitual present (and in the other tenses also) we thought of happenings at home. For example, my brother, Carl, gets up first at home every morning, My sister, Cora, gets breakfast at my home. I will help my mother cook next summer, and so on—each pupil contributing something.

We also had question-and-answer lessons, like: Have you an electric stove at home? Do you know how to make coffee? Can you get dinner for the family? We gave much needed stress to the habitual present in these preparations but the pupils should be so familiar with the verbs they can use them in any of the four tenses—past, future, present or present progressive.

With a full understanding of the new terms, those who have had practice in writing topics, should give an account of the morning work at home without much help. (Don't neglect the chart.) But for those who have had little practice, help will be needed on the structure of a topic. For these, we select a child whose home work, we think is fairly representative, and by questioning him, let him tell about the morning work there. These spoken sentences are written on the slate in paragraphs (after being corrected), then the others, observing how this is done, should be able to tell of the morning work at their homes more or less independently. What we are trying to avoid is the teacher's pouring out an unwieldy mass of facts through dictation, expecting the pupils to imbibe them, maybe reproduce them, and to like it. They'll loathe it. But on a subject close to their hearts, like the happenings at home, and with the language also to express them, they'll talk freely. And they will like the

lesson. Your very evident interest (delight is better) in what they tell you will add to their zest. The corrected product, quoted below, gives a fair idea of what should be expected of a child.

MORNING WORK AT HOME

My father gets up first at home every morning. He makes a fire in the stove and fills the kettle with water. Then mother gets up and gets breakfast. Father goes to the barn and feeds the stock.

Mother makes coffee and toast for breakfast. Then she fries bacon and eggs. Sometimes she makes batter cakes.

In a little while father comes back from the barn and calls the children to get up. Someone shakes me because I cannot hear. We all dress and get ready to eat. Then my sister, Erma, sets the table and we have breakfast.

After breakfast father goes to work. Erma and I wash the dishes and help mother clean up the house.

With pupils unpracticed in using the habitual present tense, we at times, erase all the verbs in the topic and have them rewrite it giving the correct tense forms.

The following subjects make their appeal because of their nearness to everyday life. These subjects, it will be seen, do not call for what is past, as a story or locals would do, but for what happens daily, often, over and over, again and again.

Work in the print shop
In the carpenter shop
In the sewing room
In the mending room
School sports
Our school parties
Christmas vacations
Mother's work at home
Father's work
Making garden
Going to the store
Going to the movies
Feeding the pigs
Picking cotton
Growing corn
Harvesting wheat

Another section of the country would, of course, call for subjects familiar to pupils in that region.

And now let's look at the steps that lead to an interest in

the unknown. There are, we find, objects in the schoolroom that hold the pupils' interest because they use them but of whose origin they know almost nothing. Take rubber for example. They are especially aware of it in these war times because we have trouble getting pencils with rubber erasers. It is not difficult to hook up their interest in pencil erasers to the growing of rubber far away. We will now take a look at a sample lesson.

Teacher: (indicating a pencil eraser) What is this made of?

Pupil: Rubber.

T: Very well, tell me some other things made of rubber.

P: Overshoes, balls, tires, rubber bands, etc.

T: Does rubber come from our country? Where does it come from?

The pupils are probably uncertain.

T: No, we cannot get rubber here. It comes from countries far away.

Here we all go to the wall map and find Brazil and the East Indies where it is found in abundance.

T: Do you think rubber comes out of the ground like coal?

Some pupil may tell you it comes from trees.

T: Yes, it comes from trees.

Now it is time to show pictures of rubber trees and of the natives gathering the sap, called latex. Also of latex being made into crude rubber ready for shipment. If possible at this time furnish the class with reading matter describing these processes. Mrs. Stevenson's booklet, called "Nature Facts" gives something of it. Also provide pictures of some of our big rubber-goods factories and the advertisements of their finished products. You may be surprised at how much the pupils can tell you of these products—the boys of the different makes of tires and the girls of household articles. Make sure that your interest in what they tell you is very evident. Keep the work alive and pleasant.

The new language terms coming up in this lesson should have been drilled on in the way described under Morning Work at Home.

With a knowledge, then, of the language relating to rubber and a sufficient number of facts about it to contribute something themselves, your pupils are ready for the write-up of the subject. You will, of course, help them by suggestions, you may dictate some sentences and will straighten many. You may have them go to their desks and attempt the work independently or, gathered in a circle, have them produce a joint product on the slate—each, if possible, contributing something. The topic quoted below shows one of these joint lessons corrected so that it made suitable reading for our school paper. I want to say again that before attempting it, drills had familiarized the pupils with the new words, they had learned many facts which they could express, and they were interested.

RUBBER

Rubber comes from rubber trees in warm countries. The trees grow in Brazil, in the East Indies, in Africa, in Mexico and Central America. We do not get much rubber from these far-away places now because of the war. We are all picking up and saving scrap rubber to help our country.

Rubber is used in making overshoes, hot water bags, erasers, balls, tires, rubber heels, rubber hose and many other things. Our Army and Navy, too, need many things made of it.

Rubber comes from the sap of the rubber tree. This sap is called latex. Men cut the bark on the trees and the latex flows out. It falls into pails or cups which hang on the trees. When this latex is gathered it is heated very hot and it becomes crude rubber. Crude rubber is sent by ships to other countries.

There are no rubber factories in the warm countries where rubber grows, but there are many in the United States. There is a large factory at Dayton, Ohio. It is called the Goodyear Rubber Company.

Because rubber is so scarce now our factories are learning how to make synthetic rubber. Maybe we will learn more about that someday.

III

Interest in topic work is added to by having the pupils' output published in the school paper, or another teacher may be pressed into service for reading and favorable comment.

Some other subjects which carry interest from the known over into the unknown are:

paper
clothing (from imported materials)
leather
lumber
salt
any imported foods
graphite (for pencils)
home used medicines
metals (of which shop implements are made)

Persons, too, and letters may be used to attach interest to the unknown. The soldier brothers now in all parts of the world give us an excellent opportunity to broaden the interests.

There is reading matter in plenty, too, to be correlated with the work at this stage. It is found in geographies, in health books, in the junior science books, in the nature series, etc. The child's interest should be reaching out, leading him to ask for information about objects he handles. May we not hope to give him an inquiring mind so that he will go after information on his own initiative?

In teaching the habitual present tense there is, it seems to me, a difficulty not yet touched upon in this paper. It is that of a child's trying to recall and to express the unlike events that happen in disconnected units of time—like those expressed by occasionally, seldom, once in a while, etc. I don't know what the psychologists think about this, but I have found that it is harder for children than it is to recall and express happenings that follow in succession as the events in a story do—that is, those introduced by, after that, then, in a little while, etc.

Let's look at the varied tasks of a boy working in the print shop. His folding papers one day does not suggest that he will set type the next nor does his frequently cleaning cases imply that he will occasionally operate the press.

The tasks do not dovetail; they do not belong together because of any dependence one on the other. And yet they must be told and put together so that in the end they will form a united whole—an adequate account of the print shop work.

I think it is well for the teacher to face the difficulty that comes up here. She may need more patient effort, more enthusiasm in her praise for well-done work and more and more repetition.

If, after reading this, some teacher is inclined to ask how one is to find time for so much work, I should like to quote our principal who sometimes laughingly says, "Please ask me something easier to answer." I don't know how, with our crowded course of study, you are to find time to do any more. I take the time in the fifth and sixth grades from that allotted to textbooks. In the end the pupils will perhaps not be able to name many battles in history, nor to recite so many facts from geography (though I would insist that they know some). But if they get a better understanding of English "as she is spoke" they can, with this added boon, make up, later, for the loss of facts.

Before closing I would like to enlarge on what I said, earlier in this paper, of the deaf child's entanglement with the language of textbooks. This comes largely, of course, from two causes—a meager vocabulary and the failure to get meaning out of the long, winding complex sentences. I am convinced, however, that a child on familiar ground in using the habitual present tense finds this book language less difficult. For books give information, in great measure, about what is true year in and year out, about what takes place over and over. A tense, therefore, is called for that connotes duration, repetition (at regular intervals as with often, every day, etc.), and recurrency (often at irregular intervals as with seldom, occasionally, etc.). That tense is the habitual present. And our deaf children need to feel at home with it.

Training and Placing the Deaf in Industry

Address delivered at the Mid-Winter Conference held at the Michigan School for the Deaf, February 3-5, 1944

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Division of the Deaf and the Deafened
Assigned to the United States Employment Service

IN 1822, five years after the first permanent school for the deaf in America opened in Hartford, Connecticut, it introduced industrial training. Instead of a thought thrown into the future projecting vocational training as we have it today, it was more likely a case of where "necessity was the mother of invention." Other schools for the deaf, as they were established in the several states, followed its example. Resources for the maintenance of these early schools may have been inadequate while many deaf adults, without schooling in their youth, took advantage of this opportunity to learn their A, B, Cs and to acquire the wonderful knowledge that two and two make four. There are those of us who have passed three score years and ten who can remember primary classes with a fair sprinkling of men who spent much time and patience cultivating handle-bar moustaches and goatees, spade beards and Van Dykes, side burns and Brannigans. Vividly do we recollect the tight laced bustled women with their hair in either door-knob style or heavy coils. There was manpower and womanpower among the pupils to assist in servicing the old frame buildings that were often the homes of our early schools for the deaf. The men were taught carpentry and painting and the women to perform domestic services. To keep the shoes and the clothes of those connected with the school in serviceable shape, cobbling, tailoring and dressmaking were a natural addition. This was in keeping with pioneer economics when every member of the family contributed to its support. As the schools became larger more trades were taught and vocational training, as we understand it, was the result. For

years these were the only schools in America that prepared their pupils to be self-supporting after they left school by teaching them trades while they were in school. Around the turn of the century it was the claim of schools for the deaf that 90% or more of their graduates were self-supporting; that a higher percentage of their graduates were gainfully employed than were the graduates of our leading universities.

In comparatively recent years public school systems have added vocational training to their courses. With their greater resources they have forged ahead of schools for the deaf in this work.

Labor conditions have changed. Mass production has reduced labor to a series of specialized tasks requiring only limited skill; labor is unionized; labor laws have multiplied; occupational hazards and diseases together with the result of increased tempo, make mandatory various forms of insurance for the protection of both the employer and the employee.

To assist themselves in meeting these changed conditions and to overcome the prejudice against their employment, occasionally encountered among uninformed employers, medical examiners, personnel managers and foremen, the deaf, through their own initiative and efforts, have secured the enactment, in various states, of laws creating Divisions of the Deaf in the Departments of Labor. This movement began in 1913. It has devolved upon these divisions to assist the deaf in availing themselves of the services of National, State and Local divisions of the Government and the various service agencies, of which they may not have been informed. Thus the field has broadened beyond counseling, training and placement work.

Before proceeding we wish to make it plain that what we have to say is limited to our experience with the deaf and the hard of hearing of Michigan. If other states can derive any benefit from what we have done and are doing they are welcome to it. If we learn of a practical idea for the advancement of the deaf as employed in another state, we will avail ourselves of it whether or not we are invited to do so.

In Michigan there are many organizations interested in the welfare of the deaf and the hard of hearing as is demonstrated at this conference. If there is another state where there are so many organizations cooperating so harmoniously and efficiently to this end it has been a carefully guarded secret.

At the outbreak of the war there was some question as to the feasibility of training the deaf and the hard of hearing in the vocational schools available for unskilled and semi-skilled workers to prepare them for war work. Some persistence was required to induce the schools to admit those with impaired hearing. Upon experimenting it was found that there was no difficulty, in the majority of cases, for the deaf and the hard of hearing not only held their own but they were sometimes drafted to instruct those who could hear. It was found that many hearing people learned more rapidly from being shown an operation than from instructions given by word of mouth. It was only a short time before the deaf were freely flowing through the training schools into war plant jobs. There was very little employer resistance. This we attribute to the excellent work of educating plant executives as to the capabilities of the deaf, undertaken by certain commissioners of the Department of Labor and Industry, who stressed the subject by means of letters, addresses, newspaper releases and over the radio. It is true the manpower shortage had much to do with the ready absorption of the deaf into war work but the educational efforts were a contributing factor.

As to placement work for those with impaired hearing it is a pleasure to doff our hat to the United States Employment Service, in Michigan. There are 52 Local Offices in the State, ten being in the Detroit Area. In each of these offices is stationed a representative or representatives whose duty it is to specialize in the placement of veterans and handicapped persons. Mr. Harold T. Hayes is State Supervisor of Handicapped Placements. He is thoroughly conversant with the placement of handicapped persons in general and he knows as much about the placement of the deaf and deafened as anyone of whom we are aware. He visits each of these 52

offices and sees to it that the deaf receive proper service. There is also a Supervisor of Veteran and Handicapped Placements in the Detroit Area. This is Mr. Chester Field. He is likewise capable, well informed and indefatigable in the performance of his duties. The United States Employment offices are not only willing to refer persons with impaired hearing to jobs they are capable of filling but if an employer is doubtful of the wisdom of employing such a person, they persist and eventually sell him to the employer. They do not feel deaf persons are suitable only for existence level and dead-end jobs but secure for them jobs that meet their highest skill. We do not, and have no right to expect, more than this. The deaf are not vocationally handicapped and must stand on their own feet. Furthermore, Mr. Hayes has organized Councils composed of the various service agencies in the larger centers of population throughout the State, to discover and bring out handicapped persons suitable for employment. If certain handicapped persons are cursed with an inferiority complex and are timid about presenting themselves, the United States Employment Service proposes to find them and correct this attitude.

In the work for rehabilitation, counseling and placement, Vocational Rehabilitation in Michigan ranks among the leaders in the Nation in service to the deaf, if indeed it does not top all other states. Mr. Correvont is too modest to make such a blunt statement but he can be depended upon to maintain the pace already set.

Timid souls may fear the deaf may run into complications with Labor Unions. Study the history of labor in the United States and you must conclude that Labor Unions have been among the greatest of uplifting agencies. The Unions are not perfect but you are invited to name anything conceived in the mind of man that is perfect. In Michigan the deaf have almost invariably joined Labor Unions and they have been well and fairly treated. That this condition will prevail we have every reason to believe. Mr. George W. Dean, Commissioner of Labor, under whom the Division of the Deaf and the Deafened functions, is State President of the A.F.L. Mr. John W. Gibson, who preceded Mr. Dean as Commis-

sioner of Labor, is State President of the C.I.O. Mr. Gibson developed an understanding and sincere interest in the deaf and the hard of hearing and retains this interest. With such good and influential friends at the helm we have no cause to worry.

With such a set-up as this there is little reason to consider the deaf as a class apart with special problems of employment. There is need of constant vigilance to maintain this condition in the kaleidoscopic shifting of both industrial and governmental executives. If there is one thing about which employers still need to be assured it is the fact that deaf employees are exceptionally free from compensable accident.

The deaf are not different from other people in that in their ranks are found all types. Hundreds of deaf people have come to Michigan from other states to take advantage of the exceptional opportunities here offered. There have been those guilty of absenteeism and of quitting one job for another. Some have spent their earnings unwisely. This is as true of those who can hear as of those who are deaf. If employers will realize this they will not be prejudiced against employing the deaf but will exercise the same care in employing the deaf as they do with others. As a whole, the deaf have profited by their opportunities and have creditably carried their full share of our war production work. Many have made excellent records and have been highly commended by their employers. It has not been possible to meet the demand for deaf workers. This is the condition which now prevails.

While we must not be too optimistic and cease to prosecute the war with full vigor, there is a tendency gradually to convert our war plants to the production of consumer goods. We all pray for an early ending of the war and to see our boys come marching home. This will mean the end of the production of war materials on its present scale, in which so many are now engaged. During the conversion to consumer goods there may be periods of unemployment to be cared for by unemployment compensation, but we, and the rest of the world, need everything from pipe cleaners to automobiles and there will be new and better consumer goods to

tempt into circulation the money we may have been able to lay aside. It is reasonable to suppose our plants will again be producing at capacity. This does not mean that there will be no problems to solve but by the employment of common sense the American people will cross these bridges at the proper time. Compared to those of other warring countries our problems will be trivial. Today is the tomorrow we worried about yesterday and nothing has happened.

Since 1822 our schools for the deaf have been working along the right lines, and making progress, compatible with their resources, to prepare their students to meet labor conditions in their several sections of the country. Michigan is a manufacturing state and the graduates of our schools for the deaf have naturally sought and secured employment in our manufacturing plants. While the young are taught to use tools and learn the rudiments of a craft in vocational classes, we should bear in mind that, in most lines, industry prefers to train its own men. This brings us back to the wisdom of our fathers when the apprentice placed his foot on the first rung of the ladder to the acquisition of a skill and worked his way up in the environment of his craft. He was taught the different steps in his trade by repetition until he had mastered each in turn and had rounded out into a skilled craftsman, competent to begin and to finish an entire job. An apprentice must have comprehensive training both in the classroom and in practical worth while work and organized job experience. The Michigan School is admirably located on a broad campus, giving it privacy and space, but conveniently near great industrial activities. A plan is now being utilized in this school to apprentice those with mechanical aptitude to near-by industrial plants, for a certain number of hours each day, not to interfere with their school work. Here they can acquire through experience on the job the discipline of the working world, the ability to get along with other workers, the pride of creating with their own hands the products used in industry and commerce, the sense of security that comes with earning their own living as a result of their own labor and an understanding of the relation between their school work

and the problems of their craft. While it may be a large order, in addition to instruction in mathematics, draftsmanship, shop parlance and blue print reading, they should have an understanding of labor and safety laws, workmen's compensation and unemployment compensation. There have been graduates of this school who have lost comparatively large sums because of their ignorance of workmen's and unemployment compensation.

If there is anything in which the deaf worker is particularly deficient, and that interferes with his employment, it is in the command of the English language. To correct this, the basic principle of apprenticeship, to learn by doing, should apply. There should be co-ordination between class room instruction and the child's daily need of expression outside of the class room. To learn English one must use it in the environment of the English language.

"Apprenticeship is a system of learning by doing," starting with the simpler jobs and progressing to the more intricate. Together with the broadest possible educational background this apprentice training is an indispensable factor in the development of our youth as citizens. It gives them a purpose toward which they can direct their energies.

Miscellaneous

Certification.—Professor Fusfeld, of Gallaudet College, who is secretary for the Conference Committee on Certification, announces the following individuals are to be added to the list of those who have submitted application for teachers' certificates. This brings the total who have made such application to 1305.

Evadna Burgett Bouchard, Rochester School.
Julia Burg, Gallaudet College.
Hazel Cress, Washington School.
Thomas Jefferson Dillon, New Mexico School.
Virginia Ficklin, Missouri School.
Gladys I. Finney, Missouri School.
Elizabeth Fruewald, Tennessee School.
Sister Margaret Mary Green, St. Francis Xavier School.
N. Lee Harris, Indiana School.
William Joseph Marra, Kansas School.
Arthur Clarence Manning, Western Pennsylvania School.
Clarence E. Miller, Indiana School.
Janis Marler Smith, Louisiana School.
Virginia Grant Spainhour, North Carolina School.
Lester Clarence Stanfill, Indiana School.
Boyce Robert Williams, Indiana School.

Our Roll of Honor

Adney, Richard, Lieutenant, Judge Advocate's Office, U. S. Army (husband of Mrs. Barbara M. Adney, Colorado School).

Douglas, Albert, U. S. Army (American School).

Hunter, Roy Wescott, U. S. Army Air Forces (husband of Mrs. Melva B. Westcott, Texas School).

Iles, Richard, Ensign, U. S. Navy (son of Edmisten Iles, New York School).

McAbee, Harold, Second Lieutenant, U. S. Marine Corps (son of Mrs. Margaret Miller, Oregon School).

Welch, Ada D., Women's Auxiliary Corps, U. S. Army (Rochester School).

WEYERMAN, WILLIAM, U. S. Navy (son of Charles Weyerman, Texas School).

WOODEN, PHYLLIS NATALIE, Women's Reserve, U. S. Marine Corps (daughter of Supt. Harley Z. Wooden, Michigan School).

Please submit the names of those eligible to mention in the Roll of Honor. It is the desire of the ANNALS to make this list as complete as possible. Forward information to Prof. Irving S. Fusfeld, who has kindly consented to continue with this feature, or to the Editor.

Rehabilitation work among deafened men of the military service.—Among those who are devoting full time to aiding the war deafened men are the following:

Deshon General Hospital, Butler, Pa., Mrs. Elizabeth Nitchie, Mrs. Shirley Stein, Mrs. William Terry, Miss Mae Fisher, Miss Mary McCracken, Miss Emma Kessler, Miss Nedra C. Cramer, Miss Mary G. Hearty, Miss Margaret M. Thompson, Miss Emily Harris, Miss Gertrude Torrey, Corporal Helen M. Mayer (WAC), Miss Florence Murrin (volunteer), Miss Florence Woolley, Miss Helen Lowry, Miss Laila Larsen, Sgt. Francis Sonday and Pvt. Wayne Jeans.

At Borden General Hospital, Chickasha, Okla., Sgt. Edward Scouten, Pvt. Elizabeth E. Benson (WAC), Pvt. Robert Baughman, Mrs. Lois Jean Weida, Miss Lillian Van Bebber, Miss Anne Purdy, Mrs. Isabelle Demarest, Mr. John Morris and Lt. Raymond H. Hull, M.A.C.

At Hoff General Hospital, Santa Barbara, Calif., Miss Helen Scriver, Miss Ruth Barlett and Miss Frances H. Downes.

Training centers certified by conference of executives of American Schools for the Deaf.—In reply to frequent inquiries we wish to print herewith a list of schools, or training centers, that have been certified by the Conference of Executives Certification Committee. Several of these are no longer training teachers and in some instances applications have been made for surveys to be conducted in order that additional training centers may be listed:

California School for the Deaf, Berkeley

Central Institute for the Deaf, St. Louis, Mo.
Clarke School for the Deaf, Northampton, Mass.
Gallaudet College, Washington, D.C.
Indiana State School for the Deaf, Indianapolis
Lexington School for the Deaf, New York City
Mackay School for the Deaf, Montreal
Maryland State School for the Deaf, Frederick
Michigan School for the Deaf, Flint
Milwaukee Teachers' College, Wisconsin
Mississippi School for the Deaf, Jackson
Pennsylvania School for the Deaf, Mt. Airy, Philadelphia
New Jersey School for the Deaf, West Trenton
North Carolina School for the Deaf, Morganton
Ohio State School for the Deaf, Columbus
Ontario School for the Deaf, Belleville
Parker Elementary School, Chicago
South Dakota School for the Deaf, Sioux Falls
St. Mary's School for the Deaf, Buffalo, N.Y.
Tennessee School for the Deaf, Knoxville
Texas School for the Deaf, Austin
Wayne University-Detroit Day School, Michigan
West Virginia School for the Deaf, Romney
Western Pennsylvania School for the Deaf, Edgewood, Pittsburgh

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V Partial Deafness or Impaired Hearing

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VII Number of Deaf in United States
VIII The Deaf by Sex
IX The Deaf by Race and Nativity
X The Deaf by Age
XI The Deaf by Age at Occurreice of Deafness
XII Physical and Mental Condition of Deaf
XIII Marital Condition of Deaf
XIV Extent of Education among Deaf
XV Means of Communication in Use Among Deaf
XVI Economic Condition of Deaf
XVII Legal Treatment of Deaf
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XXXII Attendance of Deaf at Schools
XXXIII Methods of Education of Deaf
XXXIV Forms of Instruction Afforded in Schools for Deaf
XXXV Cost to State for Education of Deaf
XXXVI Public Donation of Land to Schools
XXXVII Private Benefactions to Schools

PART V

XXXVIII Conclusions with Respect to Work for Deaf in United States

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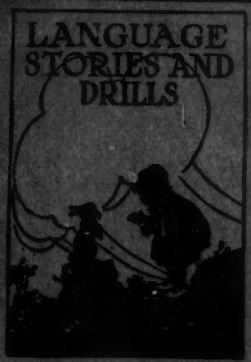

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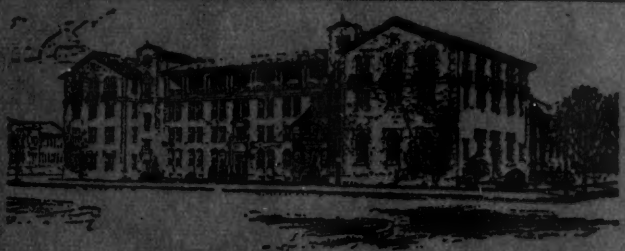

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